

STS-134/ULF6

FD 05 Execute Package

MSG	Page(s)	Title
037A	1 - 16	FD05 Flight Plan Revision
038	17	FD05 Mission Summary
039	18 - 21	FD05 Transfer Message
040	22	STORRM Daily Act with DRU3(1) Power Down
041	23	FD04 MMT Summary
042	24 - 25	ULF 6 Comm Guidelines (Rev D)



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Approved by OpsPlan:
J. Kitchen

Last Updated: May 20 2011 1:00 AM GMT JEDI (Joint Execute package Development and Integration), v3.0

MSG 037A (27-0626) - FD05 FLIGHT PLAN REVISION Page 1 of 16

2 3 4 5 6 7 8 9 10 11 12 13	MSG I MSG N 037 038 039 040 041 042		TITLE FD05 Flight Plan Revision FD05 Mission Summary FD05 Transfer Message STORRM Daily Act with DRU3(1) Power Down FD05 MMT Summary ULF 6 Comm Guidelines (Rev D)
14 15 16 17	1.	For to	Sleep Cryo Config oday's post-sleep cryo config, O2 tanks 1, 3, & 4, and H2 s 1 & 4 will be active.
18 19 20		R1	O2,H2 MANF VLV TK1 (two) - OP (tb-OP) O2 TK3 HTRS A,B (two) - AUTO
21		A11	CRYO TK4 HTRS O2 A,B (two) - AUTO
23 24		A15	CRYO TK5 HTRS O2 A,B (two) - OFF
2526272829	2.	√MC0	leep Cryo Config C for deltas prior to configuring for pre-sleep. Inight's pre-sleep cryo config, manifold 1 will be closed with O2 and
30 31 32		H2 tai	nks 1 & 5 active. CRYO TK5 HTRS O2,H2 A,B (four) - AUTO
33 34		A11	CRYO TK4 HTRS O2,H2 A,B (four) - OFF
35 36 37		R1	O2 TK3 HTRS A,B (two) - OFF O2,H2 MANF VLV TK1 (two) - CL (tb-CL)
38 39 40 41 42 43 44 45 46 47 48 49 50	3.	Box, t should mid-d	sed Inspection Procedures the PDRS team is currently working on a focused inspection procedure and d have a preliminary version and DOUG targets uplinked for review after your ay meal. We have not scheduled a dedicated conference, but MCC will be able during your DOUG review in the afternoon to answer any questions that ave.

MSG 037A (27-0626) - FD05 FLIGHT PLAN REVISION

Page 2 of 16

4. Mark/Drew: During rndz, the temperatures on the STORRM PDU Relay Board were increasing at a higher rate than expected, prompting the request to shutdown STORRM early (except for the PGSC). In order to stay below limits during STORRM Ops for Data Retrieval the next few days, the STORRM customer requests manually commanding the PDU to turn off DRU 1 or DRU 3. Which DRU to turn off will be designated in the lederhosen each day.

Today, instead of performing the STORRM DAILY ACT cue card during your Post Sleep activity, we would like you to Activate STORRM and power off DRU3 per MSG 40.

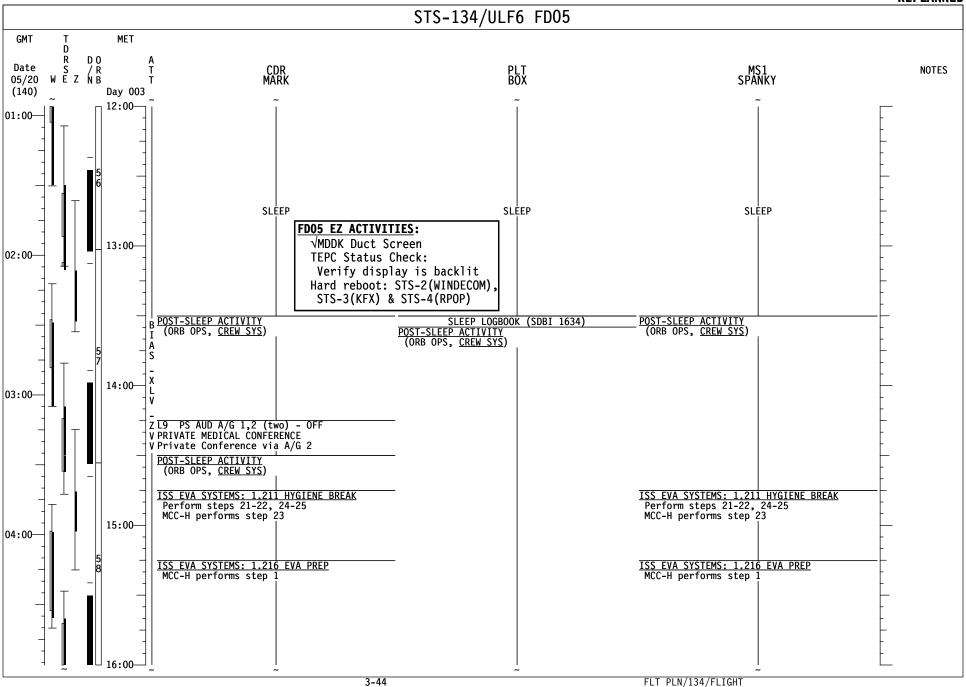
5. Crew Choice Downlink Opportunities Morning of FD05

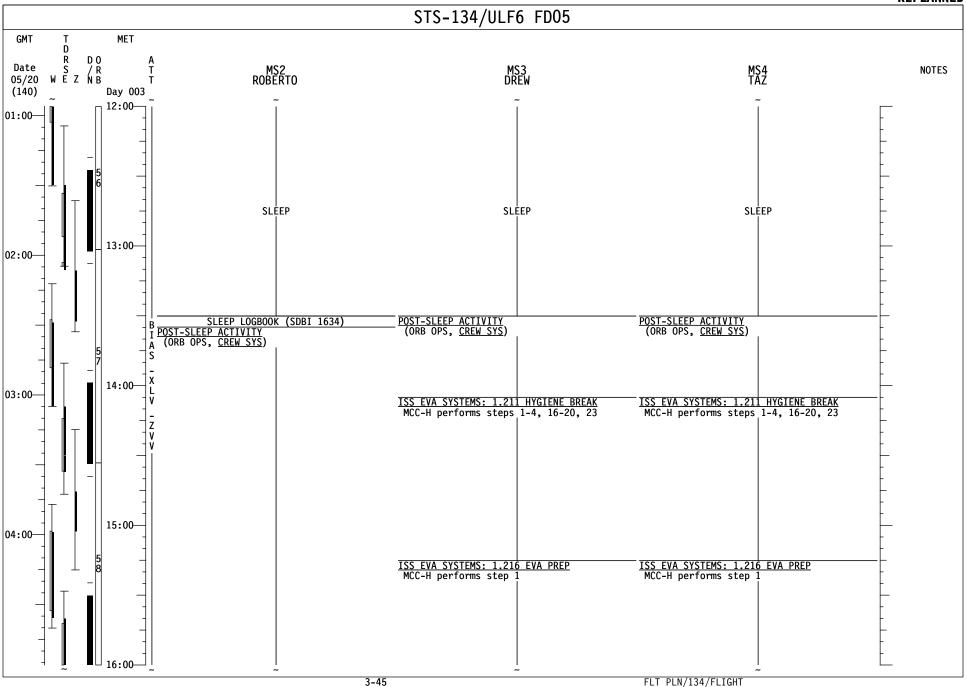
TDRS	AOS	LOS	Delta (min)
E-TDE	3/14:16	3/14:29	13
W-TDW	3/15:03	3/15:36	33
E-TDE	3/15:46	3/16:01	15

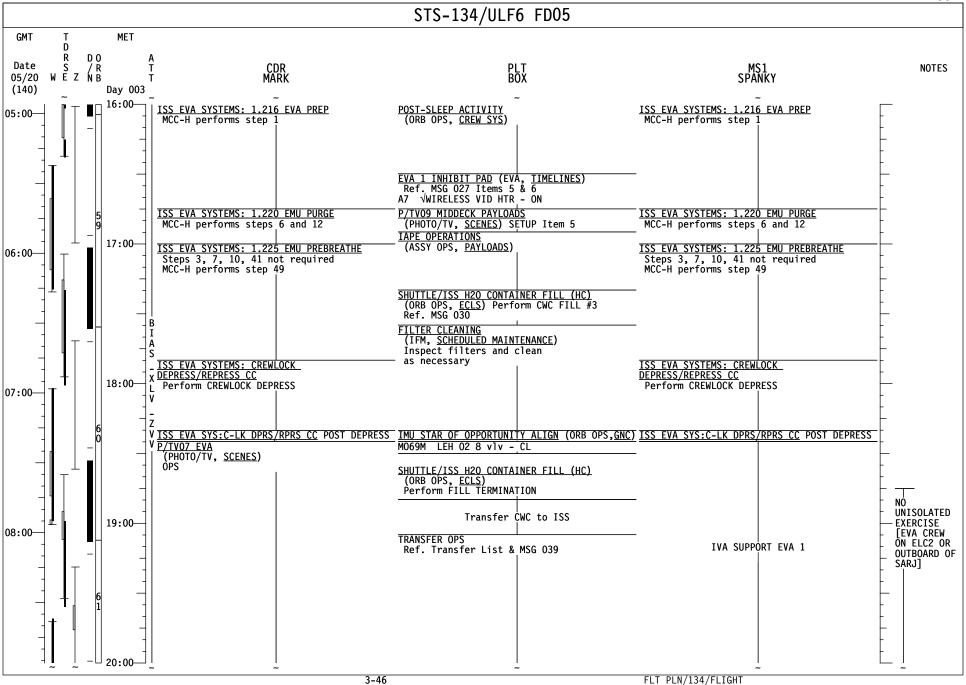
6. REPLACE PAGES 2-14 AND 2-16, AND 3-44 THROUGH 3-53.

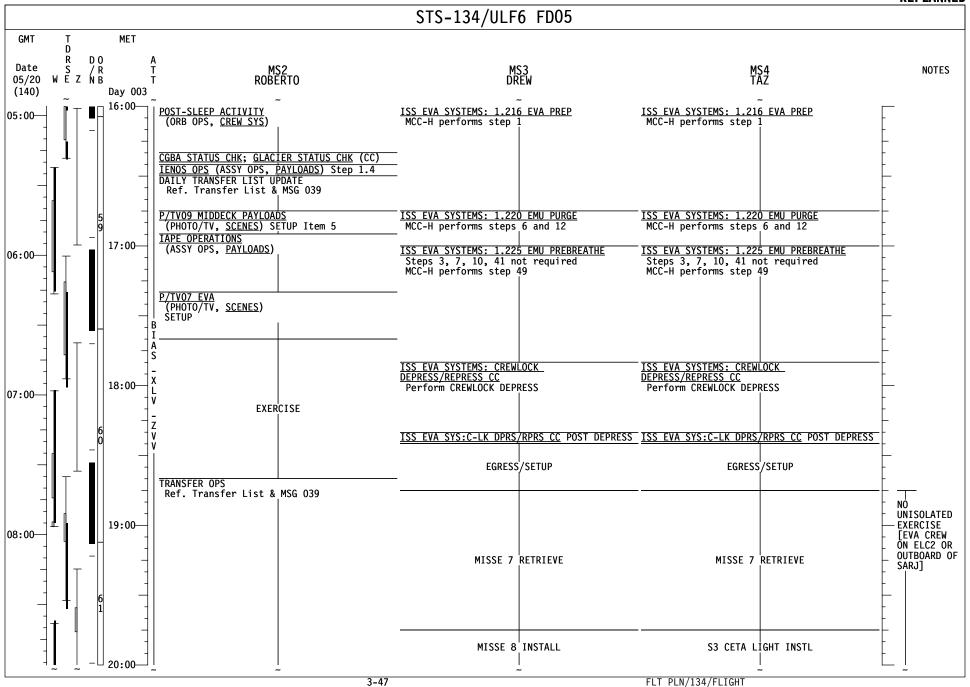
MT ET	05/20/11 (140) Day 003	01 02 2 13	03 14	04 0 15 16	5	06 17	07 18		08 19	09 20	· ·····	77 77 77 77 77 71 71 71 71 71 71 71 71 7	11 22 	REPLANNED 12 23 004
<u>EI</u>	FD05	SLEEP	POST PMC S E	HYG BRK/ HATCH CLS	VA PREP U	P U R G PREBREATHE	C_LK DPRS	- - - S	P/TV0	7 EVA	11111	MEAL	P/T	VO7 EVA
	PLT BOX	SLEEP	L 0 POS	ST SLEEP	I P I I P I I P I I P I I P I I P I P I	IAPE C I W N C I H T 3	ILTER NSPECT	C W I	C W E C Y M F E R	MDDK XFER		MEAL	МОС	K XFER
S T S	MS1 SPANKY	SLEEP	FUST SLEEP	HYG BRK/ HATCH CLS	VA PREP U	U EMII	C_LK DPRS) - 0 0 8				IVA SUPPO		
1 3 4	MS2 ROBERTO	SLEEP	L 0 POST	Γ SLEEP	MEFPDS/UDOKS	IAPE P E / V T A V S O 7 / U	EXERCIS	SE	MDD	K XFER		MEAL	LIOH XFER	MDDK XFER
	MS3 DREW	SLEEP	POST HYGIEN SLEEP BREAK/ 14.7	IE P/B CAMPOUT E 10.2 DPRS		U EMII	C_LK DPRS	P E S G E D R T P S U	MISSE 7 RETRIEVE	MISSE 8 INSTALL	P3-P4 NH3 JMPR INSTL	PJ PN 5 M 6 H PP - 3 6 R E J A M S P 3 R	AB EWC ANTENNA	P M D P 16A/ 1 A T J 16A MATE P E 0 2 L
	MS4 TAZ	SLEEP	POST HYGIEN SLEEP BREAK/	IE CAMPOUT E		U _{EMII}	C_LK DPRS	P E S G E D R T P S U	MISSE 7 RETRIEVE	LIGHT 7	J P3-P4	P4 NH3 JMPR STOW	LAB EWC 3 A - T P E 4	P16A/ E A N U P
N	O EXERCISE DAY/NIGHT ORBIT	56	57	58	59		6	0	NO I	UNISOL EXI	R [A]	62		63 64
SS	TDRS E Z				- _	H H	-XLV -2	 		J-		+		
	NOTES			2-14	@STATU #STATUS	S CHECK	AL1 -2		[A] NO UNIS	SOLATED EX PLN/134/F	ERCISE LIGHT	[EVA CREW	ON ELC2 OR OU	BAG RECONFIG* [BOARD OF SARJ]

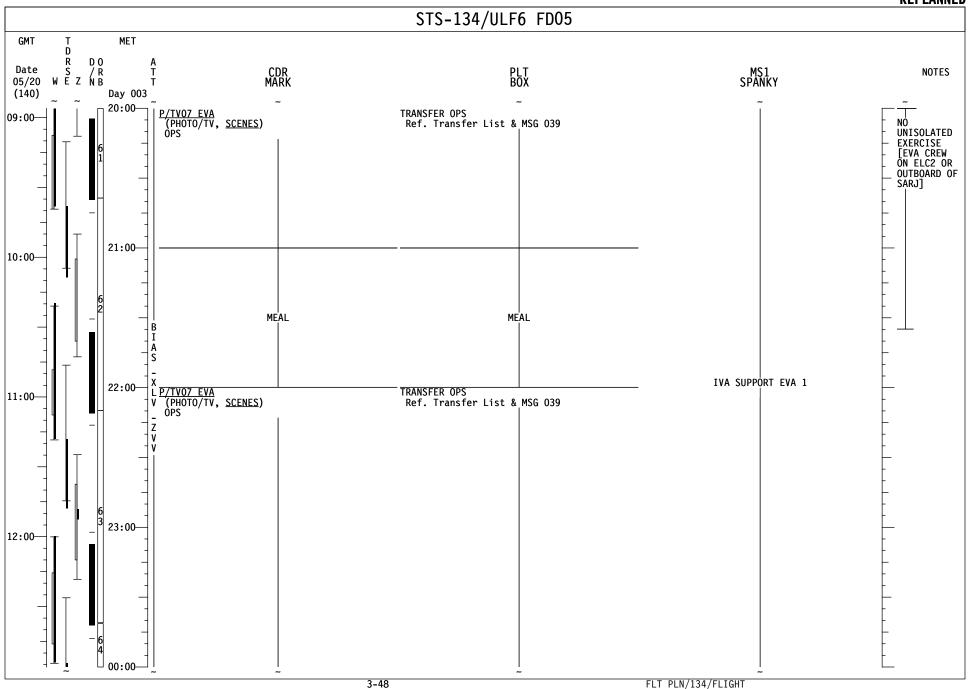
GMT	05/20/11 (140)	13 14 15 16 17	REPLANNED 18 19 20 21 22 23 05/21
MET	Day 004 004 FD05	13 14 15 16 17 4/00 01 02 03 04	18 19 20 21 22 23 05/21 05 06 07 08 09 10 11 12
	CDR MARK	P/TV07 RT P POST EVA W/H20 O N PRE SLEEP PMC A/G SLEEI	SLEEP
	PLT BOX	M X D F D E K R D E	SLEEP
S T S	MS1 SPANKY	EVA 1 IVA SUPPORT EXERCISE DOUG P T O A S G T U PRE SLEEP REVIEW E P V A	SLEEP
1 3 4	MS2 ROBERTO	MDDK XFER BP R E K R F # F # F # F # F # F # F # F # F # F	SLEEP
	MS3 DREW	Q D T CLNUP P C R P POST EVA E T U S E P L S E P L V A S K S P P A A P P C R S LEEP	SLEEP
	MS4 TAZ	C L P C R POST EVA R E T U PRE SLEEP P A W/H20 S E P L V A S K S	SLEEP
N	O EXERCISE DAY/NIGHT ORBIT		67
ISS	TDRS E Z	64 65 66	67 68 69 70 71 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	NOTES	*BAG RECONFIG #STATUS CHECK ^ACCUM REPRESS	
		2-16	FLT PLN/134/FLIGHT

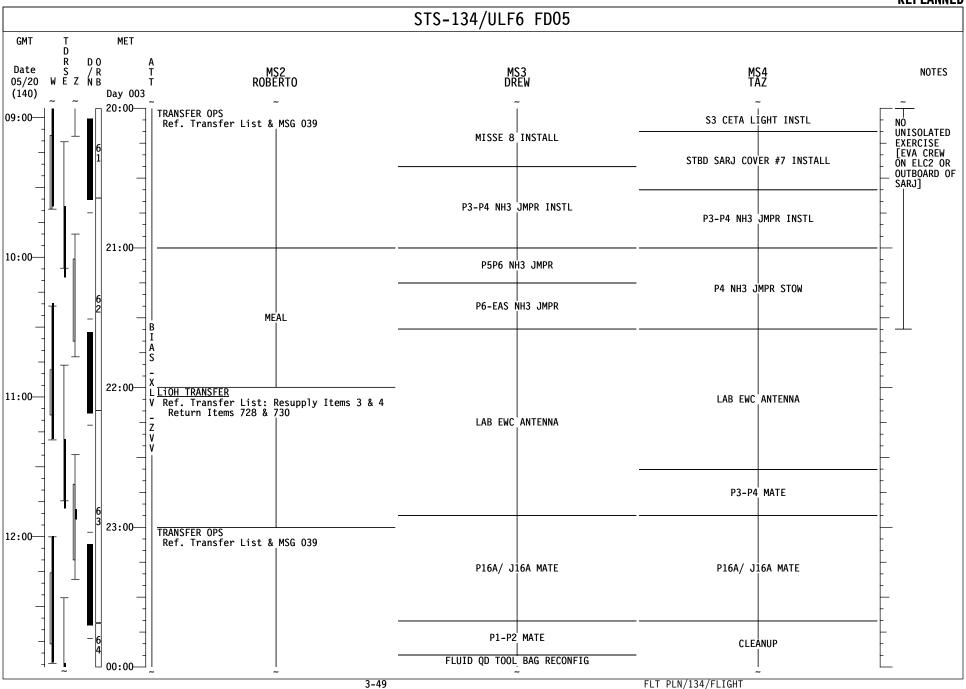


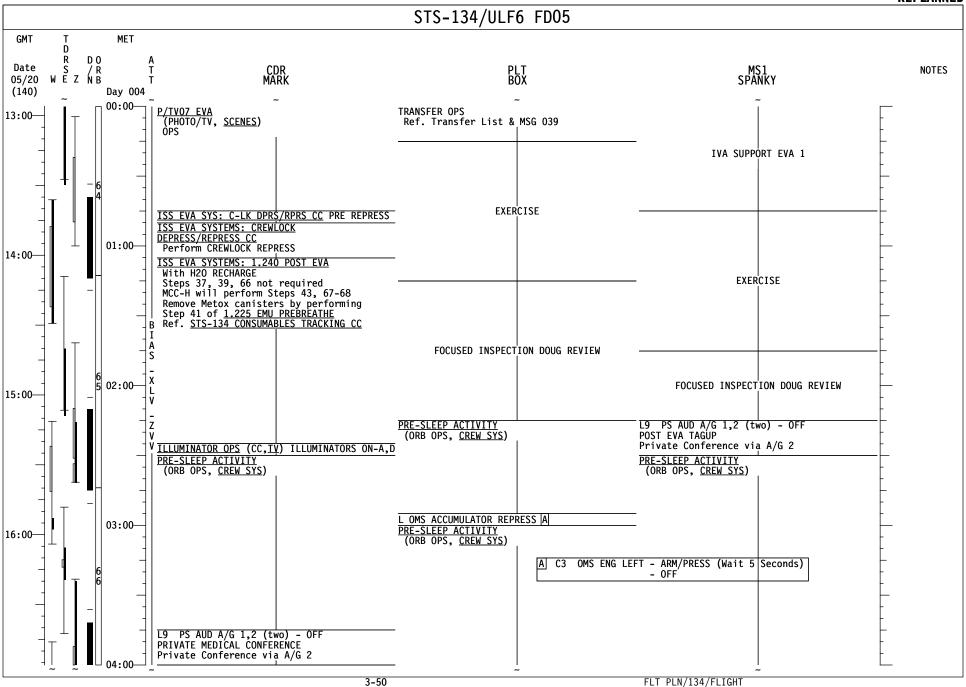


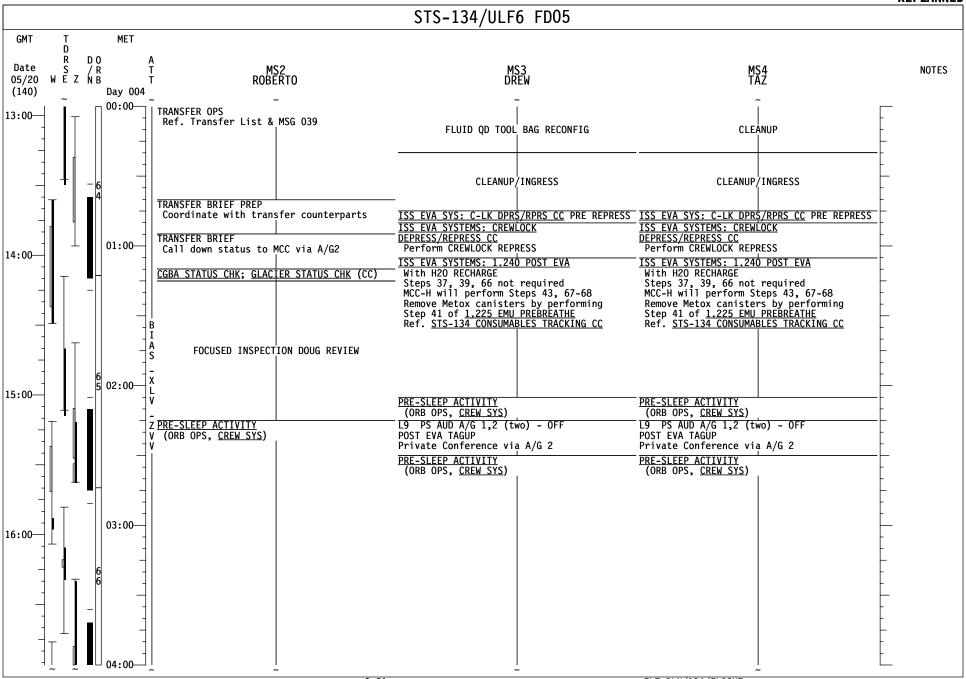






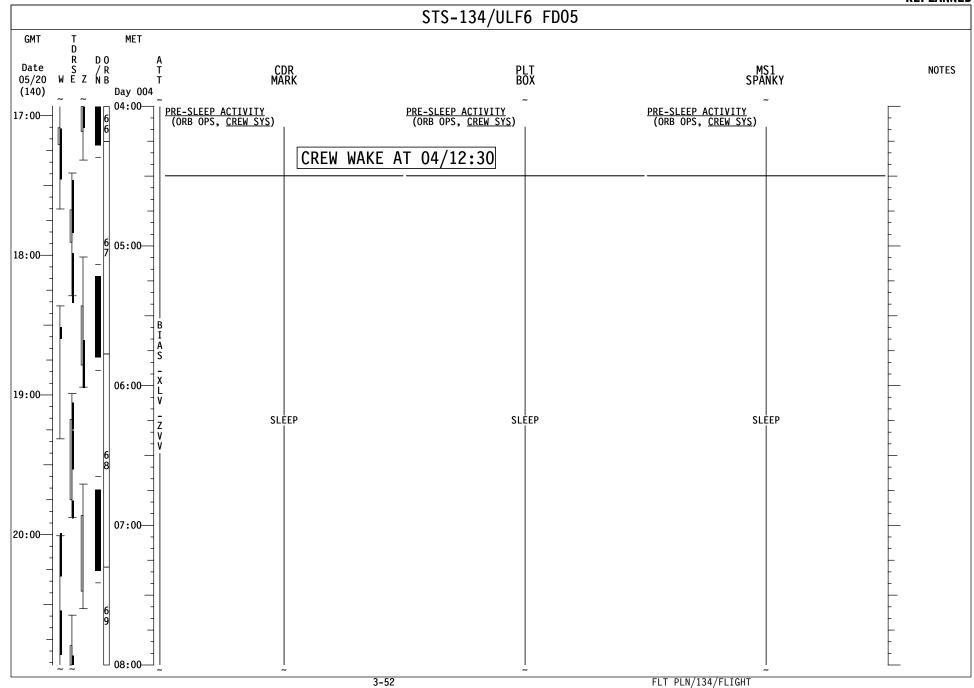


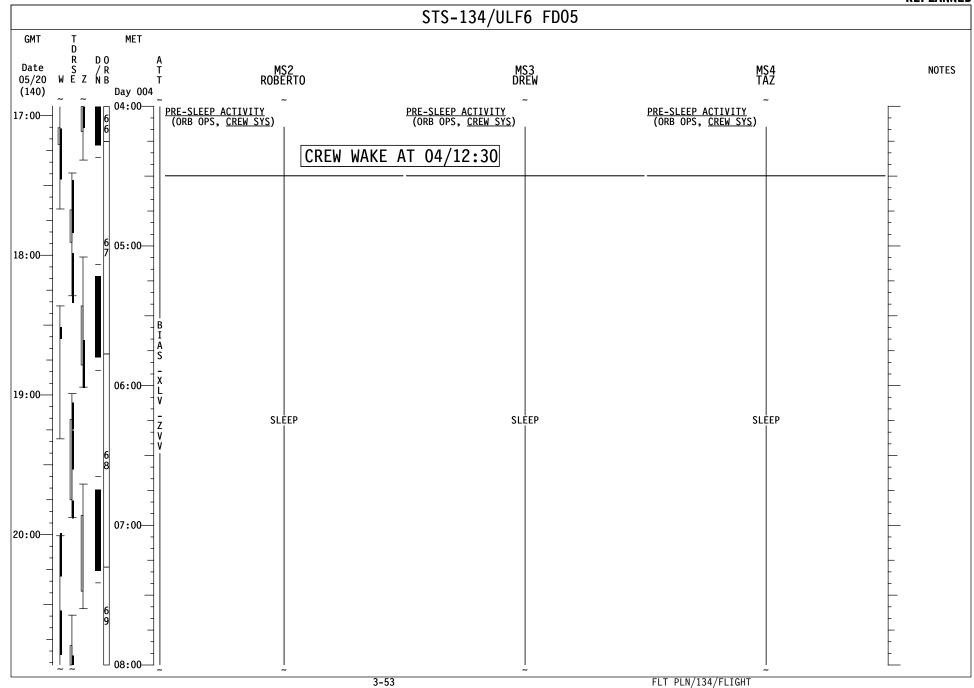


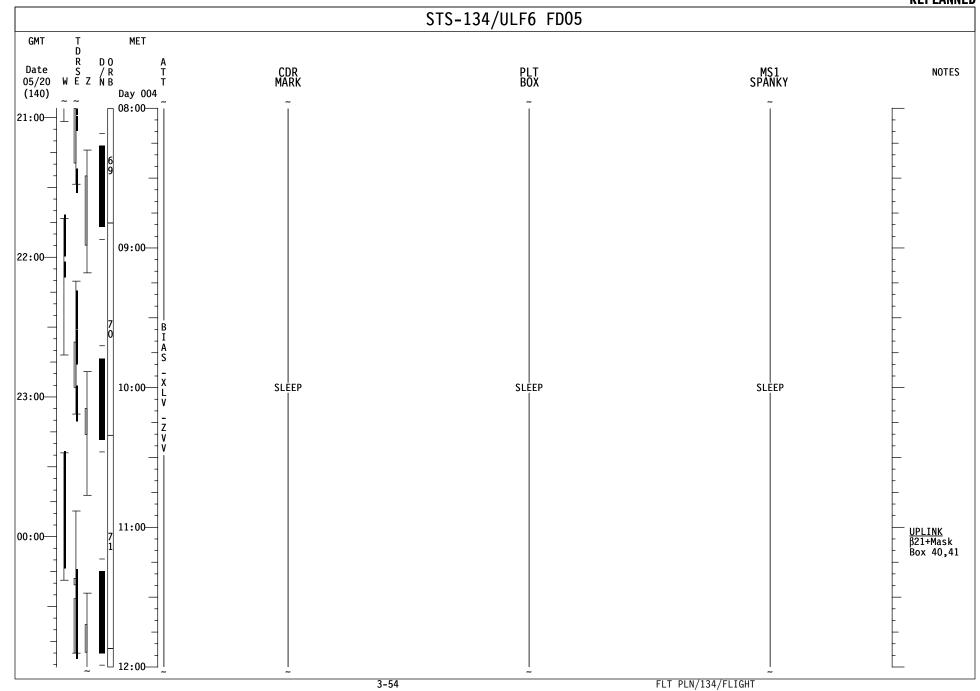


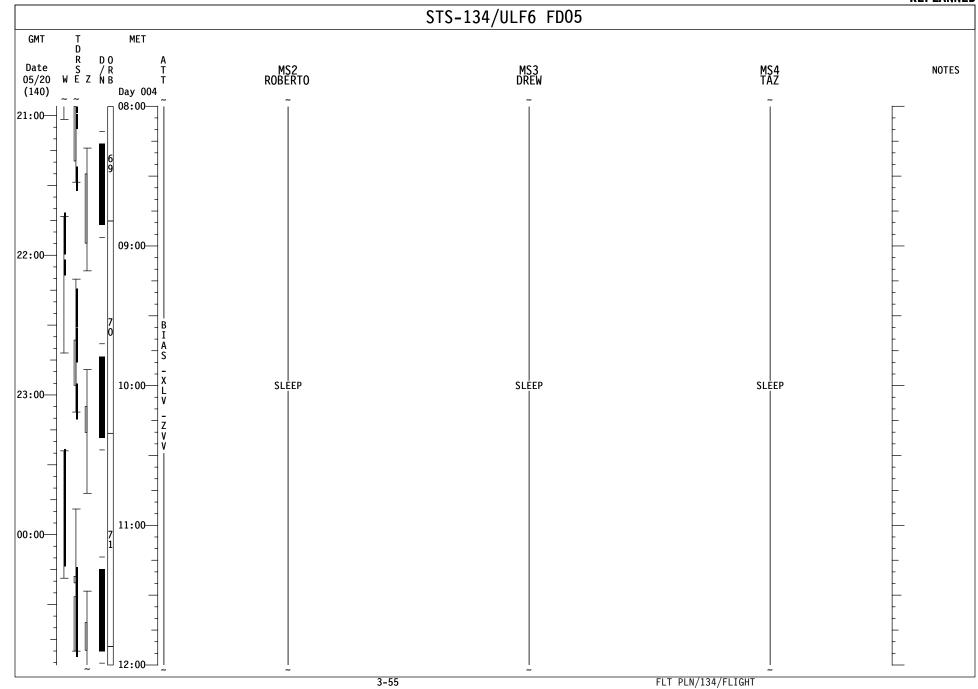
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FLT PLN/134/FLIGHT









MSG 038 - FD05 MISSION SUMMARY

1 2		g Endeavour!!!! tallation was geat!								
3	Happy EVA Day!!!!									
4 5	YOUR CURF	YOUR CURRENT ORBIT IS: 187 X 183 NM								
6 7	NOTAMS -									
8 9 10 11	EDW - ONLY. EDW -	EDW 22L/04R IN USE. EDT 2 LAKEBED RWYS RED.	2R/04L EMERGENCY DAY USE							
12 13	NOR - NTU -	LAKEBED RWYS GREEN.								
14 15 16 17	FFA - NOT USABLE. IN CARETAKER STATUS. LAJ - RWY WIDTH REDUCED TO 154' - EAST SIDE OF RWY CLSE BEN - NOT USABLE. NOT SUPPORTED. IKF - NOT USABLE. NO AGREEMENT									
18 19		OPPORTUNITIES:								
20 21 22 23	EDW22 ORB 64 – 4/00:34 SKC 7 220/05P08 EDW22 ORB 79 – 4/23:22 SCT 250 7 240/06P08									
24 25	OMS TANK	OMS TANK FAIL CAPABILITY:								
26 27 28	NO									
29	LEAKING OF	MS PRPLT BURN:								
30 31 32	L or R OMS	LEAK: ALWAYS BURN RETROGRA	ADE							
33	OMS QUAN	TITIES(%) (POST Ti)								
34 35 36		= 33.23 R OMS OX = 34.28 = 33.24 FU = 33.95								
37 38 39	FOR CURRE	ENT QTYS, SUBTRACT INCN'T CC	UNTER							
40	DELTA V AV	'AILABLE:								
41 42 43	OMS ARCS (TOTA	AL ABOVE QTY1)	345 FPS 47 FPS							
44 45	TOTAL IN TH	HE AFT	392 FPS							
46 47 48	ARCS (TOTA FRCS (ABO)	AL ABOVE QTY2) VE QTY 1)	80 FPS 31 FPS							
49 50 51	AFT QTY 1 AFT QTY 2		82 % 44 %							

- 1 Good morning Roberto & Mark!
- 2 You guys did an awesome job yesterday! We're amazed at your efficiency!

Comments from FD04 Calldown

- We copied that Roberto was in the middle of the LiOH Transfer during the calldown and we think we know what he completed, but since the Resupply numbers were not actually called down complete, we left them unchecked. I assume we'll clean that up during the FD05 calldown.
- We copy that you couldn't find the Cleaning Solution. The best we can tell you is
 that it launched in the Still Camera Bag with the Lens Cloth Kits. The transfer of this
 item was an ISS Crew Request, so we think it's POSSIBLE that one of the other
 crew members gave it to the ISS crew already. If you still can't find it, please let us
 know.
- You called down that Item 9 (RSP s/n 1004) was complete but its swap counterpart, Item 735, was not mentioned. Can you confirm that Return Item 735 (RSP s/n 1002) was completed, as well?
- To follow up with you as well, we told Paolo last night that Item 31.2 (1.0 CTB that was supposed to go into LAB1D4_K2) should be stowed on the PMM1S4 Rack Front. He indicated he would take care of that. The items in this CTB will be stowed as part of Unpack.

The Transfer List Excel file, FD05_Transfer_List_STS134.xls, is located on the KFX machine in **C:\OCA-up\transfer** (and available via the **PGSC homepage**).

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For ISS, the Transfer List Excel file, FD05_Transfer_List_STS134.xls, is located in **K:\OCA-up\transfer**.

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FD5 Choreography

- Paolo: Resupply Item 2 (DCS Rechargeable Batteries from A16)
- Roberto: complete LiOH swap (Resupply Items 3 & 4 and Return Items 728 & 730) (timelined)

Change Pages

- Please incorporate changes as follows:
- In the Transfer List **RESUPPLY** tab:

Replace pages 1, 4

In the Transfer List **RETURN** tab

Replace page 1

Change Details

<u>Item 2</u>: Changed operator from Ron to Paolo

<u>Item 21.1</u>: Deleted Headset since one was not transferred to Shuttle, and therefore does not need to return to ISS.

ltem 406 and 406.1: It has been agreed that 20 Mini DVCAM Tapes can be added to this bag so both items were updated to reflect adding these tapes to the bag.

STS-134 / ULF6 Resupply Transfer List

CHNG	V	FD	Initials	Item	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Wt (lbs)	ACTIVITY / Constraints / **Comments
			Mide	# lock	Resupply				Undock		
	V		Wilde		10.5MM LENS	1	A16	AL1D0		0.7	Transfer by FD11.
				·			(in Core Camera Bag)	(inside EVA FLASH 1.0 CTB S/N 1105)		0.1	**Required by Ron for FD11 P/TV-EVA CAM-10.5LNS activity.
											**Will return to Shuttle per Return Item 708
				2	DCS RECHARGEABLE BATTERIES	1 Ziplock	A16 (in Core		AL1D0 (inside EVA FLASH 1.0 CTB	1.2	Transfer by FD05.
X							Camera Bag)		S/N 1105)		**Required by Ren Paolo for FD05 P/TV-FLASH BATT-CHRG activity
											**used for EVA 2
					LiOH - Used [STS-134 Cans 1-6]	6	LiOH Box		PMM1S4_B2	59.5	Roberto will swap per LIOH XFER activity on FD05. Ref Return Items 728 & 730.
											Put Blue Sock from returning cans on these cans prior to stowing in stockpile.
					LiOH - Un-used [STS-134 Cans 11-22]	12	LiOH Box		NOD1S4_D2/E2 /F2	81.6	Roberto will swap per LIOH XFER activity on FD05. Ref Return Items 728 & 730.
											Put Blue Socks from returning cans on these cans prior to stowing in stockpile.
	V	4			MULTIMETER [DOPEY]	1	MA16D (in Multimeter Kit)		NOD1P4_A2 (in 1.0 CTB S/N 1256 in Kit	1.4	Swap with returning multimeter (GRUMPY). Ref Return Item 731.
									1017)		Transfer the multimeter only, not the kit.

STS-134 / ULF6 Resupply Transfer List

CHNG	Ø	FD	Initials	Item #	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Wt (lbs)	ACTIVITY / Constraints / **Comments
					T61P LAPTOP [AFD PCS] [S/N 1134]	1		AFD Deployed	NOD1S4_G	7.9	Spanky will transfer on FD14 per PCS T/D activity. Remove 1553 PCMCIA Card and Cable prior to transfer. Card & Cable will return on Shuttle. Transfer Item 805 at the same time as laptop is transferred.
				20.1	A31P 28V DC POWER SUPPLY [EMERALD BRICK] [S/N 1356]	1		AFD Deployed	NOD1S4_G	1.4	Spanky will transfer on FD14 per PCS T/D activity.
					ISS SSC 20 [S/N 1007]	1		Middeck Deployed	LAB1 Deployed	7.9	Spanky will transfer on FD14 per SSC TEARDOWN activity. Power supply and cable remain on shuttle. Remove USB Hard Drive and cable and stow HD & Cable inside 1.0 CTB in MF71C. **Came from ISS. Temp stowed on shuttle per Return Item 727.
х				21.1	ANR BOSE HEADSET ITEM DELETED	4		Middeck Deployed	LAB1 Deployed	0.1	Spanky will transfer on FD14 per SSC- TEARDOWN activity. **Came from ISS. Temp stowed on- shuttle per Return Item 727.3.
					SAMPLE PURGE BAGS	10		Mddk Deployed (in WATER OPS HW Jett Stow Bag)	NOD2O2 (in M-02 Bag S/N 1026)	6.8	Remove from Sample Purge Kit and transfer after all CWC fills are complete
					PWR [S/N 1018]	1		Mddk Deployed (in WATER OPS HW Jett Stow Bag)	A/L1D1_A1 or A2	1.3	Fill and transfer per H2O Ops Cue Card. **Launched in MF71K. Was removed from that bag and stowed in Water Ops Jett Stow Bag per Resupply Item 18.

CHNG	☑ I	-D Initials	Item #	Item Name	Qty	Initial Stowage	Temp Stowage	Stowage at Undock	Wt (lbs)	ACTIVITY / Constraints / **Comments
		Midd	eck R	eturn			J			
		Prepad	ked Baç	gs/Items						
			401	RETURN BAG #401	0.5 CTB	NOD2D2		MF14E	16.6	Do not transfer until COL and N3 samples are added.
										Remove contents from CTB and stow samples in upper food tray.
			402	RETURN BAG #402	1.0 CTB	NOD2D2		Bag A	33.5	
			403	RETURN BAG #403	1.0 CTB	NOD2D2		Bag A	24.3	
			404	RETURN BAG #404	1.0 CTB	NOD2D2		Seat 7 Bag	45.8	
			405	RETURN BAG #405	1.0 CTB	NOD2D2		Seat 7 Bag	54.4	Transfer after FD06. **Paolo will add one harddrive to this bag on FD06 after the ERB2-HD3-INSERT activity
х			406	RETURN BAG #406	1.0 CTB	NOD2D2		MF57C	44.2	Transfer after tapes are added per ltem 406.1
х			<u>406.1</u>	Mini DVCAM Tape	<u>20</u>	ISS Deployed		MF57C (in return bag # 406)	<u>0.8</u>	**These are the 20 tapes Cady requested to be added to return.
			407	RETURN BAG #407	0.5 CTB	NOD2D2		MF43K	20.1	
			408	RETURN BAG #408	1.0 CTB	NOD2D2		Bag A	32.7	
			409	RETURN BAG #409	0.5 CTB	NOD2D2		Bag A	18.4	
			410	RETURN BAG #410	0.5 CTB	NOD2D2		Bag E	29.9	
	\dashv		411	RETURN BAG #411	2.0 CTB	NOD2D2		Bag A	54.1	
			412	RETURN BAG #412	0.5 CTB	NOD2D2		Bag A	8.5	

MSG 040 STORRM DAILY ACT WITH DRU3(1) POWER DOWN Page 1 of 1

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4	SSP2	1. STORRM AVIONICS PWR – ON (tb-gray)
5	PGSC	2. STORRM PGSC pwr – on
6		3. Select Shuttle Apps icon
7		Select STORRM folder Select STORRM icon
8 9		4. √System Mode = Initialization, then Idle (~2 min)
10		
		NOTE STORRM application window must be selected in order for the step 6 to operate correctly
11 12		5. Select STORRM application window
13		6. After 1 min:
14		MODE Select → DATA RETRIEVAL → Accept MODE
15		7. √System Mode = Data Retrieval
16		8. Power off DRU3 (1) (DC):
17		Perform STORRM TROUBLESHOOTING, (RNDZ, RNDZ
18		STORRM)
19		step 7, p 7-62
20		In step 7.1, Command is PDU_DRU3_OFF (PDU_DRU1_OFF)
21		
22		A PDU Alert is expected after step 7.6 and can be ignored.
23		· · · · · · · · · · · · · · · · · · ·
24		9. Notify MCC, STORRM DAILY ACT complete
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MSG 041 (27-0629) - FD04 MMT SUMMARY

Page 1 of 1

STS-134/ULF6 FD04 - MMT Summary

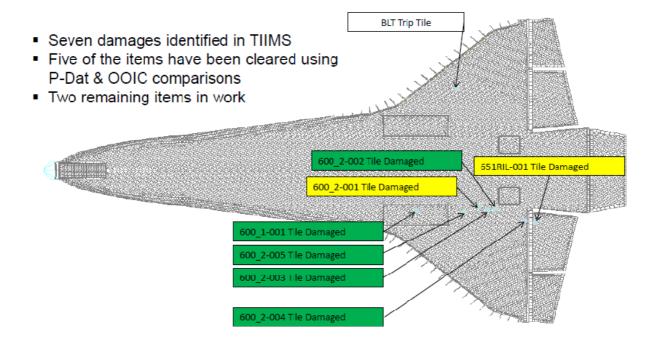
Congratulations on installation of AMS. Many happy faces. No time was wasted and data takes were initiated soon after AMS install was complete.

The MMT met today to review the orbiter systems and mission progress.

Endeavour continues to perform exceptionally well.

Work continues on assessing the tile area of interests mentioned in yesterday's MMT summary. Damaged area 600_1-001 (STBD MLG door) has been cleared by analysis. Photogrammatry was used to provide a 3D cavity of the other two areas (yellow boxes below) and the analysis (aeroheating, thermal, structure) is in work to determine if the areas can be cleared per the standard DAT team process. In parallel, the detailed Focus Inspection procedures are being finalized and the teams are developing a timeline to execute on FD6. The MMT will review the analysis findings tomorrow. The outcome of the meeting will determine if any additional damage cavity imagery is required.

Good Luck with EVA 1.



Split Sleep Shift Communication Adjustments

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The following Communications Loop Management plan was developed to protect crew members' sleep periods as a result of the split sleep schedule of the Station and Shuttle crews.

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1. To protect the Node 2 sleep zone, the ground will remove all Node 2 ATUs from public calls from the start of Shuttle crew sleep through Station crew sleep.

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2. To protect the SM sleep zone, the ground will inhibit voice uplink as follows:

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a. On FD 3 prior to docking, S/G 1 uplink will be inhibited during the Station crew sleep period. They will be awake by the time the big loop is established.

14 15 b. On FD 4 through wake-up on FD 10, S/G 2 uplink will be inhibited once Station crew enters sleep period. <u>Until crew notification, the Big Loop will not be re-established, allowing use of S/G 1 for USOS-GND comm into the published ISS sleep period.</u>

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i. The nominal comm panel configuration will protect S/G 1 voice from waking the crew in the SM.

20 21 c. To prevent waking up the crew in the SM, do not use S/G 2 onboard during Station crew sleep unless it has been configured for a scheduled PMC/PFC.

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3. To allow use of S/G 1 in the USOS when the Shuttle crew is sleeping, the ground will un-tie the 'Big Loop'. From the start of Shuttle crew sleep until the start of Station crew sleep (per crew notification), the ground will temporarily remove UHF from public call 1.

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d. During this timeframe the ground is prime to re-establish the 'Big Loop' if needed. If LOS, ISS crew adds UHF to public call 1.

282930

 Reference US_SODF; C&T: 2. Nominal: 2.2 Audio; 2.213 Audio Subsystem Configuration for UHF Ops; steps 3, 7 only

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4. We will not plan to have morning DPCs on EVA days

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5. At the start of the mission, the morning DPC on non-EVA days will be based on Dima, Paolo and Cady's wake time. At this time, we may also call up any changes to the plan that have been coordinated since the uplink of OSTPV and the Daily Summary. All ISS crew members will be scheduled for these when possible.

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Ron will not have a separate morning DPC coincident with Shuttle wake times; coordination of changes will be voiced up real time as necessary.

40 41 7. To protect the A/L sleep zone during campout periods, the ground will remove all A/L ATUs from public calls from the start of Shuttle crew sleep through Shuttle Crew wake.

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27-0630 (MSG 042) – ULF 6 Comm Guidelines (Rev D) Page 2 of 2

General Comm Guidelines updated to reflect the above:

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Due to the dynamic volume and nature of calls anticipated on this mission, we would like to start with these general guidelines and then manage calls real-time by moving to alternate loops as circumstances warrant.

Big picture:

- 7 8 9
- The Big Loop, when available, should be used for calls requiring broad team awareness. It is also used for EVA and Robotics handoffs. For calls that need to also be broadcast to the Russian segment, consider multicast on both loops (Big loop + S/G2) since the big loop is not configured in the Service Module.
- 11 12 13

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- Shuttle only and Station only calls will be made on the respective A/G 2 or S/G 2 loops when possible. Note that when those loops are privatized, there will be some calls on the big loop that would otherwise not be. The teams will determine whether the call can wait.
- 15 16

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- 3. For some Shuttle Payloads, calls will be answered by Shuttle CAPCOM until the payload is installed on ISS. At that time, Payload support transfers to Huntsville. Paycom will be enabled to respond on either S/G 2 or A/G 2. Affected payloads are:
- 19 20

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AMS

day.

- 21
- Glacier (transfer FD 9)
- 22 23
- Double Cold Bags (Paycom will take all calls)
 MYCO samples will be collected on both vehicles (Shuttle crew supported by ACO on A/G 2, ISS crew supported by JAXA on S/G2).
- 242526
- 4. When making calls to two parties, "and" and "from" can help reduce awkwardness. Example: "Airlock and Houston, from Endeavor..." also, the smoothest replies preserve the same order: "Airlock Copies," "Houston copies." More important than the order is that both parties respond in some way.
- 282930

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- 5. Transfer tagups (with Mark and/or Roberto) and Stowage tagups (with Box and/or Roberto) will be scheduled at the end of the day on A/G 2 and be supported from the WFCR.
- 313233
- 6. To help CAPCOMs with who should reply, please specify A/G or S/G rather than "On 2." Adding the topic is helpful, such as "for Double Cold Bags."

7. Pre-coordination of Shuttle PAO events will occur on A/G 2. Pre-coordination

of Station PAO events will occur on different loops depending on the time of

35 36

- 37 38
- 39 40
- 41 42 43
- 44 45
- 45